Y-12 helps NNSA balance future production scenarios; W87 LEP stays course; Engineering conducts cold tests; Y-12's Carl Cardwell observes B61 and B83 flight tests

Stockpile Programs

NWC PLAN BALANCES PRODUCTION

Balancing needs against resources is not simple, especially when needs fluctuate and resources are limited. Faced with this situation, NNSA, Y-12 and other NWC sites worked together to balance the needs of the Stockpile Stewardship Program with NWC resources and their availability.

The balanced SSP reflects Department of Defense requirements, the condition and availability of people, capabilities, and facilities and the budget realities facing the NWC. Over the next 10 to 20 years, the peaks and valleys of previous workload projections have been smoothed to accommodate the introduction of new technologies and capabilities, and completion of new, safer, more secure production facilities.

Tom Fisher, DSW's Stockpile Services manager, said "It was a long process, but the new program meets the needs of both DoD and NNSA. The former will receive units when it wants them, while the latter no longer needs to fund multiple, high-cost production projects and large workforces in the short term to ensure long-term success."

Bill Reis (front left), then Director of Directed Stockpile Work, and Rick Collier (back left) of NNSA YSO express their thanks to Y-12 employees as they sign a banner celebrating the on-schedule completion of the W87 LEP.

W87 LEP STAYS COURSE AMID CHANGING DIRECTION

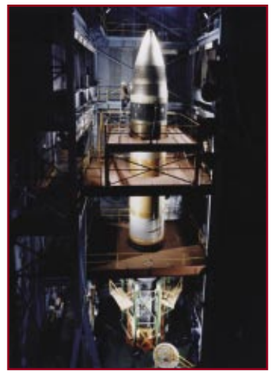
Changing directions, sometimes radically, can still get you to your destination.

Take the W87 life extension program for example. Completed successfully in October 2004, the original LEP schedule called for a small number of units to be produced in FY 2004 to conclude the program; however, other priority work resulted in some FY 2003 W87 tasks being deferred to FY 2004, almost doubling the original planned workload.

In August 2003, NNSA paused the W87 program, deferring almost the same number of units added by the earlier rescheduling. Almost halfway through FY 2004, NNSA resumed the W87 LEP.

Manufacturing identified maintenance needs for equipment, personnel assignments and materials. Planning and Integration produced a workable schedule that considered existing work scope and identified the critical path.

Less than a month after the "go button" was pushed, Y-12 was on a compressed schedule to meet the needs of all programs and customers. Steve Wilson, DSW W87 program manager, reported that "parts and subassemblies were produced and assembled at a rate that met NNSA requirements."



A Peacekeeper missile with a W87 warhead undergoing inspection.

ENGINEERING'S BIG CHILL

When Lawrence Livermore National Laboratory faced a high-profile design review of a system in which NNSA has a keen interest, LLNL's Kip Hamilton asked Y-12 for assistance. Knowledge was lacking about how a part tolerated low temperatures.

"Project lead Michael Whedbee, Steve McGhee, Randy Treece, Robert May (all of Engineering) and several others met the challenge," said DSW program manager Jeff Horning. "They used an environmental chamber and support equipment never before used to achieve such low temperatures. During the first test, the team was in troubleshooting mode. Knowledge gleaned from this test allowed the second to proceed more smoothly."

Movements were carefully choreographed because no more than 40 minutes could elapse between removing the part from the environmental chamber and taking the first radiograph. Longer, and the part would become too warm.

These "cold tests" took 6 months to execute and involved many Y-12 employees. Both tests were successful, prompting Hamilton to say, "On behalf of LLNL, I would like to thank the individuals involved for their time and talent. The information gained will augment historical surveillance results in validating the initial certification of the weapon system."

Workers at the Tonopah Test Range remove a B61 Joint Test Assembly from the hole it created when dropped from a B-2 Stealth bomber (inset).

CARDWELL OBSERVES WEAPON FLIGHT TESTS

Ever see what a nuclear bomb might look like falling to the ground?

Carl Cardwell, DSW's Stockpile Surveillance manager, did just that when he observed B61 and B83 flight tests at the Tonopah Test Range in Nevada during the week of July 12, 2004.

The B61 and B83 are the principal air-dropped nuclear bombs in the U.S. stockpile.

Cardwell was invited to attend by Los Alamos National Laboratory's B61 surveillance engineer, Lori Maestas. In the letter of invitation to Bill Reis, then the director of DSW, Maestas said, "…there is value in this opportunity …to understand the environments that the weapon will encounter…."

To ensure the safety, security and reliability of the weapons in the stockpile, a comprehensive surveillance and component testing program is carried out, including complete performance testing—without detonation. Y-12 produces components for flight test units as part of the surveillance and testing program.

Cardwell says, "Y-12 support of Quality Evaluation and Surveillance helps NNSA maintain confidence in the stockpile. Flight tests provide proof of reliability and demonstrate the effectiveness of our weapon delivery systems. Components from the tests I observed will eventually return to Y-12 for examination and analysis under the Surveillance Program."

FACES OF Y-12

Steve Wilson
Program Manager

The next generation at Y-12 must bring energy, enthusiasm, a desire to learn and eagerness to excel. It must provide a fresh perspective and be willing to do things in a different way because new eyes often challenge satisfaction with the status quo.